

## FPA Exclusive Use Helicopter Data

### Givens:

- \* Weight per Gallon of Water = 8.3
- \* Weight per Gallon of Jet Fuel = 7.0
- \* Total fuel onboard = 1.5 hours
- \* 10 minute getaway time delay for initial attack
- \* Weight per Pilot = 200
- \* Weight per Firefighter = 275 including gear (185 body weight + 30 for pack + 10 for a tool and 1/2 + 25 for 1/2 saw + 25 for a portion of the empty bucket weight)
- \* Weight per Rappeller = 300 including gear (all the same gear weight as a firefighter + an additional 25 for rappel gear)
- \* Weight of Spotter = 200 including gear (185 body weight + 15 for gear)

All of the personnel weights are incorporated in the formulas to calculate total personnel that can be moved

The formula also looks at total available seats for firefighters or rappel mission profile and will only credit up to this limit even if additional payload is available

Economy Cruise speed (MPH) Shall be used for personnel transport and Rappeller Transport

External Load Speed (MPH) Shall be used for water delivery

HOGES Payload equals CGW-OGE minus Equipped Weight, Download, Fuel and Flight Crew

HOGES-J Payload equals CGW-OGE-J minus Equipped Weight, Fuel and Flight Crew

Gallons delivered equals the HOGES-J payload minus the empty weight of the bucket/tank divided by 8.3

Rappellers delivered equals HOGES payload minus the Non-Jettison Download minus 200 for a spotter divided by 300

Fire-Fighters delivered equals HOGES payload minus the Non-Jettison Download divided by 275

All values are computed for HOGES with the Flight Manual or Supplement CGW Chart as listed

## Data Sources:

- \* The information utilized in "Specified Flight Rate", "1.5 Hours Fuel" and "Non-Jettisonable Download" was obtained from the Exclusive Use Helicopter Services Hourly Flight Rates, Fuel Consumption, and Weight Reduction Chart based on the April 15, 2003 Fuel Survey Effective February 16, 2004
- \* "Economy Cruise Speed" was obtained from "The Official Helicopter Specification Book - 2002" published by HeliValue\$, Inc.
- \* "Fleet Average Equipped Weight" was obtained from the NICC IHPI database.
- \* "Average Daily AV Cost" was obtained from USFS AMIS, BLM Exclusive-Use Fire Helicopter Cost Sheet and Interagency Contracting Officers
- \* "External Load Speed" based on Agency Helicopter Inspector Pilot and Helicopter Operations Specialist corporate knowledge of realism
- \* "Max Pax" based on contract solicitation data of certificated passenger seats
- \* "Max Raps" based on Rappel Spotter input
- \* "Bucket/Fixed Tank Weight" based on actual contract solicitation data for tanked aircraft. For bucket ships we used the 5000' PA at 30C payload weight compared to the Bambi Bucket Empty Weight Matrix

Recommend that when any FPA run output determines a helicopter is needed, the criteria for selection of an aircraft be based on efficiency (\$dollars) and optimum production (fire-fighter/Rappeller/gallons delivered).